

WHAT IS CLAIMED IS:

1 *Sub*
2 *BL* 1. A circuit-connecting material which is
3 interposed between circuit electrodes facing each other
4 and electrically connects the electrodes in the
5 pressing direction by pressing the facing electrodes
6 against each other, wherein:

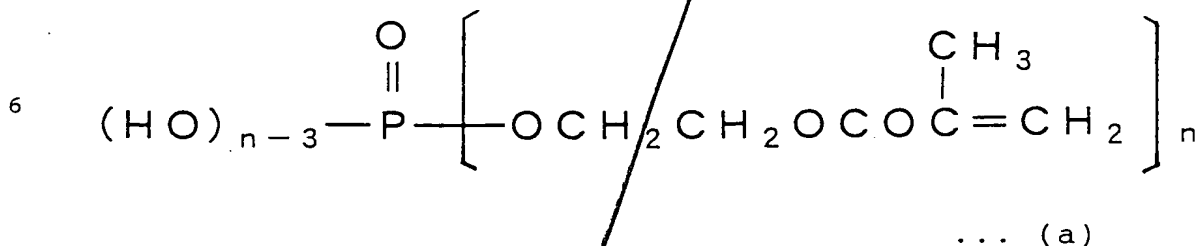
7 said circuit-connecting material comprising as
8 essential components the following components (1) to
9 (3):

- 10 (1) a curing agent capable of generating free
11 radicals upon heating;
12 (2) a hydroxyl-group-containing resin having a
13 molecular weight of 10,000 or more; and
14 (3) a radical-polymerizable substance.

1 2. The circuit-connecting material according to
2 claim 1, wherein said curing agent capable of
3 generating free radicals upon heating has a 10-hour
4 half-life temperature of 40°C or above and a 1-minute
5 half-life temperature of 180°C or below.

1 ~~3. The circuit-connecting material according to~~
2 ~~claim 1 or 2, wherein said curing agent capable of~~
3 ~~generating free radicals upon heating is a peroxyester.~~

1 4. The circuit-connecting material according to
2 any one of claims 1 to 3, wherein said
3 radical-polymerizable substance comprises a
4 radical-polymerizable substance represented by the
5 following chemical formula (a).



7 wherein n is an integer of 1 to 3.

1 5. The circuit-connecting material according to
2 any one of claims 1 to 4, wherein said
3 hydroxyl-group-containing resin having a molecular
4 weight of 10,000 or more is a phenoxy resin.

1 6. The circuit-connecting material according to
2 any one of claims 1 to 5, wherein said
3 hydroxyl-group-containing resin having a molecular
4 weight of 10,000 or more is a phenoxy resin modified
5 with a carboxyl-group-containing elastomer

1 7. The circuit-connecting material according to
2 any one of claims 1 to 5, wherein said
3 hydroxyl-group-containing resin having a molecular

4 weight of 10,000 or more is a phenoxy resin modified
5 with an epoxy-group-containing elastomer.

1 8. A circuit-connecting material which is
2 interposed between circuit electrodes facing each other
3 and electrically connects the electrodes in the
4 pressing direction by pressing the facing electrodes
5 against each other, wherein:

6 said circuit-connecting material comprising as
7 essential components the following components (3) and
8 (4):

9 (3) a curing agent capable of generating free
10 radicals upon heating and having a 10-hour half-life
11 temperature of 40°C or above and a 1-minute half-life
12 temperature of 180°C or below; and

13 (4) a radical-polymerizable substance.

1 9. The circuit-connecting material according to
2 claim 8, wherein said curing agent capable of
3 generating free radicals upon heating is a peroxyester.

1 10. The circuit-connecting material according to
2 any one of claims 1 to 9, which contains an acrylic
3 rubber.

1 11. A circuit-connecting material which is

2 interposed between circuit electrodes facing each other
3 and electrically connects the electrodes in the
4 pressing direction by pressing the facing electrodes
5 against each other, wherein:

6 said circuit-connecting material having, in a
7 measurement with a differential scanning calorimeter
8 (DSC) at 10°C/min., an exothermic reaction arising
9 temperature (Ta) within a range of from 70°C to 110°C, a
10 peak temperature (Tp) of Ta + 5 to 30°C and an end
11 temperature (Te) of 160°C or below.

1 12. The circuit-connecting material according to
2 any one of claims 1 to 11, which contains conductive
3 particles.

1 13. A circuit terminal connected structure
2 comprising a first circuit member having a first
3 connecting terminal and a second circuit member having
4 a second connecting terminal, wherein:
5 said circuit members being disposed in such a
6 way that the first connecting terminal and the second
7 connecting terminal face each other; the
8 circuit-connecting material according to any one of
9 claims 1 to 12 being interposed between the first
10 connecting terminal and the second connecting terminal
11 which face each other; and the first connecting

12 terminal and the second connecting terminal which face
13 each other being electrically connected.

1 14. A circuit terminal connecting method
2 comprising:

3 disposing a first circuit member having a first
4 connecting terminal and a second circuit member having
5 a second connecting terminal, in such a way that the
6 first connecting terminal and the second connecting
7 terminal face each other and interposing the
8 circuit-connecting material according to any one of
9 claims 1 to 12, between the first connecting terminal
10 and the second connecting terminal which face each
11 other, followed by heating and pressing to electrically
12 connect the first connecting terminal and the second
13 connecting terminal which face each other.

1 15. A circuit terminal connected structure
2 comprising a first circuit member having a first
3 connecting terminal and a second circuit member having
4 a second connecting terminal, wherein:

5 said circuit members being disposed in such a
6 way that the first connecting terminal and the second
7 connecting terminal face each other; a
8 circuit-connecting material capable of curing upon
9 radical polymerization being interposed between the

10 first connecting terminal and the second connecting
11 terminal which face each other; the surface of at least
12 one of the first and second connecting terminals being
13 formed of a metal selected from gold, silver, tin and
14 platinum group metals; and the first connecting
15 terminal and the second connecting terminal which face
16 each other being electrically connected.

1 16. A circuit terminal connecting method
2 comprising:

3 disposing a first circuit member having a first
4 connecting terminal and a second circuit member having
5 a second connecting terminal, in such a way that the
6 first connecting terminal and the second connecting
7 terminal face each other and interposing a
8 circuit-connecting material capable of curing upon
9 radical polymerization, between the first connecting
10 terminal and the second connecting terminal which face
11 each other, followed by heating and pressing to
12 electrically connect the first connecting terminal and
13 the second connecting terminal which face each other,
14 wherein:

15 a surface of at least one of said first and
16 second connecting terminals being formed of a metal
17 selected from gold, silver, tin and platinum group
18 metals; and said circuit-connecting material capable of

19 curing upon radical polymerization being formed on one
20 connecting terminal whose surface is formed of the
21 metal selected from gold, silver, tin and platinum
22 group metals, and thereafter the other connecting
23 terminal being registered, followed by the heating and
24 pressing to connect them.

1 17. The circuit terminal connected structure
2 according to claim 15, wherein said circuit-connecting
3 material capable of curing upon radical polymerization
4 is the circuit-connecting material according to any one
5 of claims 1 to 12.

1 18. The circuit terminal connecting method
2 according to claim 16, wherein said circuit-connecting
3 material capable of curing upon radical polymerization
4 is the circuit-connecting material according to any one
5 of claims 1 to 12.

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